

North Dakota Game and Fish Department

CHRONIC WASTING DISEASE (CWD)

Frequently Asked Questions

What is Chronic Wasting Disease?

Chronic wasting disease (CWD) is a progressive, fatal disease of the nervous system of white-tailed deer, mule deer, and elk. It belongs to a family of diseases known as Transmissible Spongiform Encephalopathies (TSEs). Although CWD shares certain features with other TSEs like bovine spongiform encephalopathy (BSE or mad cow disease), scrapie in sheep and goats, and Creutzfeldt - Jakob disease (CJD) in humans, it is a distinct disease apparently affecting only deer and elk. It causes damage to portions of the brain; creating holes in the brain cells and causing a sponge-like appearance.

Where is it found?

CWD was first diagnosed in a Colorado captive elk research facility in 1967 and a few years later in a similar Wyoming research facility. It was later discovered in free-ranging elk and deer near those facilities in Colorado and Wyoming. CWD has been found in captive elk herds in Colorado, Wyoming, South Dakota, Nebraska, Kansas, Oklahoma, Montana, and Canadian provinces of Saskatchewan and Alberta. Until recently, the distribution of CWD in wild deer and elk was confined to a few hunt areas in northeastern Colorado and southeastern Wyoming. However, several cases of CWD were recently diagnosed in wild deer in Nebraska, Saskatchewan, South Dakota and Wisconsin. CWD has not been found in wild or captive deer or elk in North Dakota.

How common is it?

CWD is relatively rare. In Colorado and Wyoming, CWD infects about 5-15 percent of the deer in a small core area where the disease has been found and less than one percent of the wild elk in the core area have been found to have CWD. Nonetheless, the number of CWD cases has gone up in recent years. This may be largely due to the dissemination of knowledge about the disease and the increased surveillance for its occurrence.

What are the signs and symptoms of CWD?

CWD is a slowly progressing disease; signs typically are not seen until the animal is 12 months of age. CWD attacks the brains of infected deer and elk, causing the animals to become emaciated, display abnormal behavior, lose bodily functions, become weak, and eventually die. Signs identified in captive deer include excessive salivation, loss of appetite, progressive weight loss, excessive thirst and urination, listlessness, teeth grinding, lowering of the head, and drooping ears. It should be remembered that many of these signs also can be caused by other diseases.

How is CWD transmitted?

Neither the agent causing CWD nor its mode of transmission has been positively identified. Experimental and circumstantial evidence suggest infected deer and elk probably transmit the disease through close animal-to-animal contact or perhaps from mother to offspring. Other possible sources may be through contamination of feed or water sources with saliva, urine, and/or feces or through contact with an infected facility. In free-ranging populations, decomposition of carcasses could play a role in transmission. CWD seems more likely to occur in areas where deer or elk are crowded or where they congregate at man-made feed and water stations. Artificial feeding of deer and elk may compound the problem.

What causes CWD?

Like other TSEs, CWD is apparently caused by prions, which are essentially naked and abnormal proteins, i.e., no DNA or cell nucleus. The prions cause sponge-like lesions in the animal's brain. Also, these abnormal prions tend to accumulate only in certain parts of infected animals, i.e., brain, eyes, spinal cord, lymph nodes, tonsils and spleen. Research also indicates that prions do not accumulate in muscle tissue of deer and elk. CWD is not caused by a virus, bacteria, or nutritional imbalance.

How do you test for CWD?

The only sure and practical way to diagnose CWD is to examine the animal's brain for the characteristic lesions. This involves removal of the obex portion of the brain stem tissue from a recently deceased animal. A test for live animals, which involves removal of the tonsils, is currently in experimental and research stages. At this time, research indicates that testing tonsils for prions appears reliable for mule deer but not elk; however, removing tonsils from a live animal may not be practical. Until more research and testing can be done with the tonsil test, testing the brain stem remains to be the most practical and reliable test available.

What is the incubation period?

Incubation period is the time from exposure until development of clinical signs. Minimum incubation periods in natural cases may be as short as 12 months and as long as three or more years. Incubation periods seem to differ for deer and elk, i.e., shorter in deer.

Is there a treatment for infected deer and elk?

There is no treatment or vaccine for a deer or elk that has CWD. Death is inevitable. An animal displaying clinical signs consistent with CWD should be euthanized. Removing infected animals may help prevent spread of disease or infection.

Is CWD transmissible to humans?

According to experts and public health officials, there is no evidence that CWD can be naturally transmitted to humans or to animals other than deer and elk. However, as a precaution, the North Dakota Game and Fish Department (NDGFD) recommends that you do not consume brain, spinal cord, eyes, spleen, and lymph nodes of any deer or elk. There is no evidence that the prions that cause CWD occur in the meat or muscle

tissue of infected animals. Nonetheless, NDGFD recommend that you do not consume any deer or elk that has tested positive for the disease.

Another TSE known as BSE, a disease in cattle has been linked to cases of new-variant Creutzfeldt-Jakob disease (nvCJD) in humans in Great Britain. BSE has not been found in cattle in the United States, nor has nvCJD.

Is CWD transmissible to domestic livestock?

There is no evidence that CWD can be naturally transmitted to livestock or animals other than deer and elk. Livestock, pronghorns, and bighorn sheep have not come down with the disease, even though they were often exposed to it under research conditions. CWD is similar in some respects to two livestock diseases: scrapie affects domestic sheep and goats world-wide and has been recognized for over 200 years; BSE is a more recent disease of cattle in the United Kingdom. Although there are similarities, there is no evidence suggesting either scrapie or BSE are caused by contact with wild deer or elk.

What precautions should hunters take when handling or processing deer and elk?

There is no evidence that CWD naturally affects humans. Nonetheless, NDGFD advises that hunters take these simple precautions when handling the carcass of any deer or elk:

1. Avoid sick animals; don't handle or shoot them, instead contact local wildlife agency personnel
2. Wear rubber/latex gloves when field dressing deer or elk
3. Minimize handling the brain, spinal cord, eyes, spleen, and lymph nodes
4. Bone out the carcass
5. Avoid consuming the brain, spinal cord, eyes, spleen, and lymph nodes of any animal (Normal field dressing coupled with boning out a carcass will remove most, if not all, of these body parts. Cutting away all fatty tissue will remove remaining lymph nodes.)
6. Thoroughly wash hands, knives, and other tools used to field dress the animal
7. Dispose of the hide and bones in a sanitary landfill or incinerator

Also, hunters who plan to hunt deer or elk in other states should get additional information from the respective state agency.

Is it safe to eat venison from infected deer and elk?

There is no scientific evidence that CWD is transmissible through consumption of venison. The prion that causes CWD accumulates in certain parts of infected animals, i.e., the brain, eyes, spinal cord, lymph nodes, tonsils, and spleen. Therefore, these tissues should not be eaten. Health officials additionally advise that no part of any animal with evidence of CWD should be consumed by humans or other animals. Experts suggest that hunters take simple precautions when field dressing deer and elk in areas where CWD exists.

What should you do if you see a deer or elk that looks sick, emaciated or lethargic?

Note the location and as much information as possible about the animal and situation. Call the ND Game and Fish Department at 701-328-6613 or 701-328-6300, immediately. Arrangements will be made to investigate the report.

What is the ND Game and Fish Department doing about CWD?

To date, CWD has never been found in captive or wild deer or elk populations in North Dakota. The NDGFD and the ND Board of Animal Health have been working cooperatively to reduce the potential of CWD entering North Dakota.

NDGFD is conducting Targeted Surveillance throughout the state, which entails recognition, collection, and submission of samples from wild deer and elk that are suspect or showing signs consistent with CWD. Approximately 25 animals have been tested for CWD since starting the targeted surveillance program in 1996. All samples have come back negative for the disease. NDGFD plans to increase Targeted Surveillance by using more aggressive and prompt elimination of any deer or elk exhibiting clinical signs consistent with CWD. The usual profile for a CWD deer or elk is one that is at least 12 months of age, emaciated, exhibiting abnormal behavior, increased salivation and/or trembling, stumbling, incoordination, and has difficulty swallowing.

NDGFD is currently revising and developing strategies to reduce the likelihood of CWD entering the state. However, if CWD is found in wild deer or elk in North Dakota, the Game and Fish Department will implement strategies (e.g., culling) that will be aimed at preventing its spread and reducing its occurrence in affected deer and elk herds. Eliminating CWD in free-ranging cervids is difficult, given the limited understanding of its cause and transmission and the lack of an effective vaccine or treatment.

What is the ND Department of Agriculture, State Board of Animal Health doing?

The ND Board of Animal Health (BOAH) is monitoring private, captive elk and deer herds. The Board initiated mandatory inventory of all game farms in 1993 and initiated mandatory CWD surveillance, reporting, and testing in 1998 of any captive elk or deer that dies from any cause that is more than 12 months of age. Before any deer or elk is imported into the state it must have a health certificate and/or a five-year risk assessment, which includes a traceback of the herd history. As a result of the CWD surveillance program, the captive cervid producers have submitted more than 700 brain samples for CWD testing; none have tested positive. If CWD is found in a captive animal, the farm would be quarantined and the disease eradicated using recommended disease control strategies.